

# Igor Ponomarenko

(630)991-6922 • [iponomarenko@luc.edu](mailto:iponomarenko@luc.edu) • <https://github.com/IgorPono> • [www.linkedin.com/in/igorpono2024](https://www.linkedin.com/in/igorpono2024)

## EDUCATION

**Loyola University Chicago, Master of Science(B.S. + M.S.) in Computer Science GPA: 3.97/4.0**

**August 2020 – May 2024 (B.S.) August 2024 – December 2024 (M.S.)**

- **Relevant Courses** – Data Structures I, Data Structures II, Design and Analysis of Computer Algorithms, Introduction to Object Oriented Programming, Intermediate Object Oriented Programming/Object Oriented Design, Introduction to Computer Systems, Introduction to Computing Tools, Discrete Structures, Operating Systems, Distributed Systems, Software Engineering, Programming Languages, Machine Learning, Database programming
- Interested in Masters

## EXPERIENCE

**Johnson Controls – Software Development Intern**

**May 2023 – August 2023**

- Development on company website using **Node.js**, **Redux.js**, **Angular.js**, **HTML/CSS**, **TypeScript/JavaScript**
- Worked on legacy code restructuring/refactoring, visual changes, bugfixes, unit testing, and implementation of new website features
- Managed workflow using Git and Jira
- participated within the company's **Agile/Scrum** teams, daily standups and bi-weekly sprint planning

**Zia Labs – Software Engineering Intern**

**January 2023 – May 2023**

- Setup password-less authentication system to sync over wired and wireless connection
- Collected audio & electromagnetic noise samples for evaluation of signal processing algorithms
- Implemented Reed Solomon key encoder for password-less authentication system
- Prototyped **embedded system** ADC using **ATSAME54P20A microcontroller**
- Setup prototype system to collect electromagnetic data

**Loyola University Chicago Privacy & Cybersecurity Lab – Research Assistant/Software Developer**

**February 2022 – December 2022**

- Modified **Linux Kernel** source code for experimental virtualization platform
- Designed and tested portable containerized applications based on Docker, VMware and developed experimental platform
- Analyzed various performance metrics of **Docker**, **VMware** and compared them to experimental platform
- Benchmarked I/O speed, cycles, instructions executed, and cache misses for host and virtual machines using Ubuntu performance monitoring
- Developed logfile parsing software to generate plots of data acquired through benchmarking scripts

**Loyola University Chicago – Computer Science Tutor/Student Instructor**

**August 2022 – May 2023**

- Student Instructor for Operating Systems, assist students with homework and explain class concepts
- Assisted undergraduate students with introductory programming classes in C++ and Java
- Explained fundamental programming concepts, such as **object oriented programming**, **polymorphism**, **abstraction**, **encapsulation** and **data abstraction**
- Facilitated online and in person office hours for general help in classes
- Classes ranging from introductory to advanced in languages such as C, Python, Java

## PROJECTS

### [i386 Operating System](#)

- Built a 32-bit operating system based on the i386 PC using combination of C and Assembly
- Using QEMU emulator
- Wrote various drivers for terminal writing, I/O polling, virtual memory and fat filesystem driver
- Future versions will implement memory allocation (malloc)

### [Android Timer Application](#)

- Wrote Android App using Java that functions as a timer
- App is a timer with user set countdown, reset and alarm sound
- Implemented using various software engineering practices such as composite, visitor and state pattern

### [Discord Music Bot](#)

- Created a Discord bot that plays back YouTube audio in public voice channel
- Written in Python and made use of the Discord Bot open API
- Utilized FFmpeg to convert Youtube links into playable mp3 files that code can utilize
- Built a remote server and utilized it to host the bot to guarantee constant uptime

## SKILLS

**Languages(Programming):** Java, C/C++, Python, Assembly, SQL, HTML, CSS, JavaScript, TypeScript, Scala

**Languages(Spoken):** English – Fluent, Russian – Intermediate

**Operating Systems:** Linux, Ubuntu, Gentoo, Windows 7/8/10/11

**Software:** Docker, VMware, FFmpeg, PyCharm, IntelliJ, Visual Studio, GCC, GDB, Vim, balenaEtcher, Git/Github/Bitbucket, Gradle, Android Studio, Android SDK, Microsoft Suite, AWS, Qemu, Replit, Grub, Discord API, Microchip Studio, MPLAB, Devcloud/OneAPI, Jira